[redacted]

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Document Delivery System (DDS)

An important aspect of OCR's developing document storage and retrieval system in the 1960's was its document delivery system. Commonly abbreviated DDS, this term described a large document storage system with a capability for high volume demand printing. OCR planned its DDS to be a segment of a large computer based document information system which, although not initially electronically coupled with the computer, must have the flexibility in design that would permit such coupling in the future.

Since the advent of full-scale microfilming in the early 1960's, OCR had been using a 16mm aperture card for document storage. The Machine Division in its continuing efforts to keep abreast with the latest developments in equipment discovered that most other organizations in the country had changed to a 35mm aperture card or microfiche. All research and development work leading to improvements in the microimage field was concentrating on 35mm. OCR management determined that it would require the expenditure of considerable CIA funds for research and development to update and make its own 16mm aperture card more efficient. Meanwhile commercial companies were developing improved or new methods and machines for handling the 35mm aperture card. One such development which OCR, in particular MD, investigated was the Filmsort 2000 manufactured by Minnesota Mining and Manufacturing Company (3M). This machine offered the advantage of producing automatically an aperture card for any document up to eight pages in length. In contrast OCR's 16mm system required three steps: microfilming with the use of a camera, processing the film in the laboratory, and finally cutting and mounting the film in each card. Filmsort's one step operation would permit OCR to speed up the processing of the documents so that in lieu of the 3-4 day delay in getting aperture cards into the files OCR would be able to reduce that delay to one day at the most and possibly only 3-4 hours.[18]

OCR worked closely with the CHIVE managers with the idea that a tie-in between a computer and a fully automated document delivery system could be developed. CHIVE recommended that OCR go to either 35mm aperture card or microfiche. The latter was considered suitable for lengthy publications

Memo, Acting AD/OCR to D/I, 1 June 65, Sub: Document Delivery System (in Chrono Jan-Aug 65 71-21) 2)

[redacted]

But most of OCR's documents were eight pages or less. Microfiche was also not susceptible to machine sorting and filing whereas aperture cards were. The DD/I approved OCR's request for an expenditure of $30,000 on 7 June 1965 to purchase five Filmsort 2000s and three companion Quadrant printers. 19/

As of January 1965 the Aperture Card File and the machines that reproduced copies were organizationally under different managements within OCR-- the former was controlled by the Document Section of the Library and the latter was under the jurisdiction of MD. When an aperture card was pulled from the file for reproduction, a pink charge card was prepared and put in its place. Four courier trips a day were required to move the aperture cards from the Document Section to the Machine Division and back again. The Photostat Expediter machines, which were bulky and required experienced operators for maintenance and servicing, were used for reproduction of prints from aperture cards. * With the arrival of the Quadrant printers, small machines requiring only four feet of space and easy to operate, the AD/CR approved the co-location of the files and the printers in the Document Section. ** 21/

25X1A9a

During 1966 technical discussions continued with 3M for [redacted] density variation specifications. During the period of calibrations. 3M's work on the cameras, a team of MD experts with assistance from

In MD Monthly Reports FY 66 71-18/1)

* (20/ Memo, C,MD to D/CR, 13 Sept 65, sub: MD Monthly Report Aug 65, S. The five 3M Model 2000 Camera Processors and three Model 222 Dry Silver Printers were installed in August 1965. Three technical engineers from 3M spent four days debugging the equipment and instructing MD personnel.

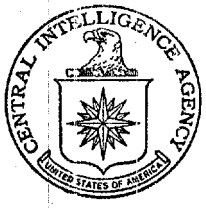
19/ 19/Memo, 7 June 65 (18, above) S.

** Document file activity in 1965 was: 181,624 documents with 895,288 pages filmed
12,500 aperture cards pulled each mont
30,000 pages of microfilm produced on Quadrant printers each month.

25X1A9a

(Source: Memo [redacted] to D/CR, 14 July 66, sub: Document Delivery System Improvement. (in Chrono July-Dec 66 71-21)

21/Memo for the Record, 5 Apr 66, sub: Technical Discussions with 3M on 28 Mar 66 (in Chrono Jan-June 66. 71-21)



Printing and Services Division undertook by further testing and countless meetings with government and commercial experts to define more precisely OCR's technical requirements and to add the greatest assurance possible that any system OCR employed would offer maximum benefits and the leadt risk. The team moved ahead with exploring the possibilities of using step and repeat cameras to backstop the 2000 operation, to provide an optimum means for capturing document images in the marginal categories, and to provide equipment more suitable for microfilming bound volumes.

25X1A9a

On 27 May 1966, [redacted] Executive Assistant to the D/CR since [redacted], recommended that the use of the 2000 cameras offered the greatest potential for improvement over OCR microfilming system then in operation. He reported that a document system employing the 2000 cameras at the head of the other line (microfilming before any processing occurred) ranked foremost amongst all possible alternatives in terms of cost efficiency, responsiveness to customer demands, and potential for applications in file conversion, electronic transmission, and high speed automatic printing.

25X1A9a

In June 1966, [redacted], Executive Assistant to the D/CR,

~~The seemingly optimistic picture of the 2000 cameras changed, however, and less than a month later, Mr. Conant announced to the D/CR~~ that 3 days of testing the two 2000 cameras that

25X1A9a

Memo, [redacted] to D/CR, 27 May 66, sub: Document Delivery System-Recommendation for Implentation. (in Chrono Jan-June 66 71-21)
Memo, [redacted] to D/CR, 15 June 66, sub: Document Delivery System. (in Chrono JanJune 66 71-21)

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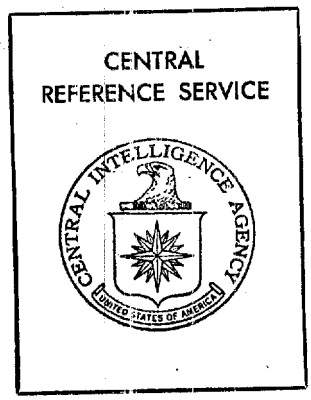

had supposedly been upgraded by 3M revealed the same bizarre density variations experienced in previous tests. This time he recommended that OCR initiate procurement of modified step and repeat cameras that would lead OCR into the Mil-D-8-up format. [redacted] reinforced his arguments for the Mil-D by including automatic image reproduction, image transmission, and automatic high speed printing as necessary in "upward compatibility" with CHIVE designs. In his memo of 11 January 1967 Mr. [redacted] concluded that the 3M cameras were not suitable for the type of application OCR needed and were inadequate in terms of quality control, supply costs, and manpower requirements.

Four National Cash Register (NCR) Model SR-1D step and repeat 35mm cameras were procured at a cost of $20,946 each. They passed acceptance tests in November 1967 and were put into operation in February 1968. The five 2000d cameras were placed elsewhere in the Agency.

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25X1A9a
25X1A9a
25X1A9a

Memo, [redacted] to D/CR, 14 July 66, sub: Document Delivery System Final Recommendation. (in Chrono July-Dec 66 71-21)

25X1X8 Memo, [redacted] to D/CR, 11 Jan 67, sub: Recommendation-Document Delivery System. (in Chrono 67 69-592/1)

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Document Delivery System

Later in 1965, at an expenditure of $30,000, the Division ordered five Filmsort 2000s and three companion Qu printers. This new document delivery system was judged com with future CHIVE and fully automated delivery systems. An of the Quadrant printers, a small machine, requi four feet of space with easy to operate, [redacted] the AD/CR approved the of the files and the printers in the Document Section.*

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The CIA Library's manual document delivery system was tested by the crash requirement to reconstitute part of the information files of the Station in the [redacted] The reconstituted file of 468 documents was delivered within 24 hours.

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12,500 aperture cards pulled each month
30,000 pages of microfilm produced on Quadrant printers each month

1962

A new Filmac 200 reader-printer was obtained(for making 18" x 24" prints of maps, newspapers, etc.) as was a Photostat ~~1471~~ 10-14 (an improved model of the Expeditor capable of making large size prints from hard copy originals with an enlargement of 10%); also purchased was a Phot-Devices Corporation 16/35 mm camera which obviates the need for light adjustments.

The automatic aperture card ~~film~~ mounter contract was closed out as unsuccessful, although the Division continues to pursue this desired goal. The Videograph contract to provide automatic, dry reproduction from either hard copy or aperture cards was terminated, since required reproduction quality was not obtained; several companies have indicated interest in developing improvements for this part of our system.

In 1961 the Project Review Committee had approved OCR's plan to replace the photostat-expeditors, used for years in making prints from the microfilm-aperture cards, by Videograph. The Videograph held promise of accepting process ~~promised~~ hard copy, video signal, maghetic tape or microfilm for reproduction; the rate of production from aperture cards was supposed to be 600 copies per hour. 25X1X [redacted]

A prototype of an automatic film mounter was delivered during ~~1960~~ In a ~~further~~ move to shorten the cyle between receipt of documents and their availability to users via Intellofax a prototype of an automatic film mounter was delivered in 1960. After a prolonged period of debugging the Machine Division was not able to perfect the special equipment and the contract was closed out as unsuccessful in 1962.

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25X1X8

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The Photostat Expeditors used for copying documents and aperture cards had been in continual operation since 1954. and ~~their~~/ had extended their maximum efficiency by 1960. The maintenance cost per unit ~~in 1959~~ was estimated at $428, for a total of $2,568 for the six units. MD experts had begun to investigate in 1959 replacements for these Photostat Expeditors that were becoming difficult to maintain. The requirements were for a machine that could handle hard copy, aperture cards, Actifilm cards and reel microfilm. MD and Printing and Services Division personnel came to the conclusion that electrostatic printing had progressed to the point where it could truly be considered the system of the future (speeds up to 10,000 characters per second had been demonstrated). A proposal, therefore, went forward to the Project Review Committee in March 1960 and was approved in June for a contract with A.B. Dick Company for the delivery and installation of a Videograph Reproduxtion System, using Videograph Facsimile equipment. The capacity of the proposed system was 4,500 pages a day, adequate to satisfy the needs of the Library and MD, at a per-page cost of $.075 as against the Photostat Expediter cost of $.091. The contract, $175,000, provided for one Videograph Scanner, one Videograph Printer, and one Aperture Card Scanning Attachment. By November 1961 Videograph had not turned out acceptable copy from either hard copy or microfilm and The contract was therefore terminated.

~~Modified Photostat Expeditors were there obtained~~ and improved
MD personnel designed and tested modifications to the Photostat Expeditors so that they could continue to be used. Other MD-in house developments also under included an automatic flash number display unit for the microfilm canera; ~~a carriage loading device~~, modified film feeders on aperture card mounters.

Memo, Acting AD.CR to Project Review Committee, 30 March 60, sub: Videograph Reproduction System. OUO. (in Chrono 60 64-341/1)

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All equipment used in the production , filing, and request service on the Intellefax IBM file was standard IBM equipment, consisting of: Model 024 card punch, Model 056 card verifier, Model 083 card sorter with a speed of 2,000 cards per minute, Model 557 interpreter for printing punched information across the top of the card, Model 088 collator for merging card decks, Model 108 card proving machine for selecting cards requested without disturbing file sequence, and Model 407 tabulating machine for printing request receipts, preparing machine listings, and tabulating management statistics.

Two DARE machines reproduced the entire first page of the document onto the IBM card. A DARE enlarger, buily by Xerox Corporation, was used to reproduce a full size copy of the first page from the DARE Intellofax card. Two Photostat Expeditors, with automatic card handlers made by MD's Equipment Service Staff, were used to prpduce copies from pre-DARE Intellofax cards. The DARE cards were viewed on machines built by MD's Equipment Service Sraff.

Standard Eastman Kodak planetary cameras were used for filming all documents into the Intellofax aperture system. Hard copy reproductions were made on the Photostat Expeditors and the 3M Model 111 dry silver printer (Quadrant).

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